



Tecotherm Neo

# Tecotherm Neo

**Total Body Cooling for babies suffering from Hypoxic Ischaemic Encephalopathy (HIE) after Birth Asphyxia has become more common in recent years especially following the publication of major studies\*. The original Tecotherm was used in studies in Europe that showed successful outcome for certain babies. Now building on from that success, the Tecotherm Neo has been launched that takes Total Body Cooling to the next level.**

The new Servo Controlled design has instant feedback monitoring the baby's temperature every second and making minute changes to the cooling fluid to ensure that the baby's temperature remains stable. Simple alarms are on hand should the temperature deviate more than 0.5°C from the set temperature. The large colour display shows the temperature clearly and colour changes highlight nursing staff to any problem.

With several new features, the Tecotherm Neo can be programmed for a complete cycle with target temperatures, duration and even rate of re-warming / cooling making it easy to set up and use even for inexperienced users. Changes can be made at any time and all changes, set and measured parameters are recorded onto a memory card every minute for later analysis.

## How it Works

A rectal probe is inserted into the patient (approx 5cm) and the temperature is fed back to the Tecotherm Neo. Using Peltier Crystals in the refrigeration unit, the temperature of the cooling fluid is controlled by varying the amount and direction of electrical current. This increases and decreases the fluid temperature by small amounts. The fluid is then passed round the baby using a mattress or a wrap and returned to the Tecotherm. The thermal properties of the fluid make it extremely efficient at heat transfer and the Tecotherm Neo uses surprisingly little energy to maintain a constant temperature.

## Alarms

Simple alarms in the Tecotherm Neo ensure that users and nursing staff are drawn to the device only when there is a problem. These alarms include:

- No Power
- Low Fluid
- No Flow
- Temperature Out of Range
- System Failure





### Accessories

The Tecotherm Neo has a complete range of accessories: Mattresses and Wraps with lining sheets for contact with the baby, rectal and skin probes, TecoMed Cooling Fluid, Connecting Hoses (in different lengths), Fill-Up Set.

The Tecotherm Neo does not need a special USB to download traces and requires no specialist software to analyse the data (Note: data is recorded as a CSV file and compatible with standard spreadsheet software).

### Features

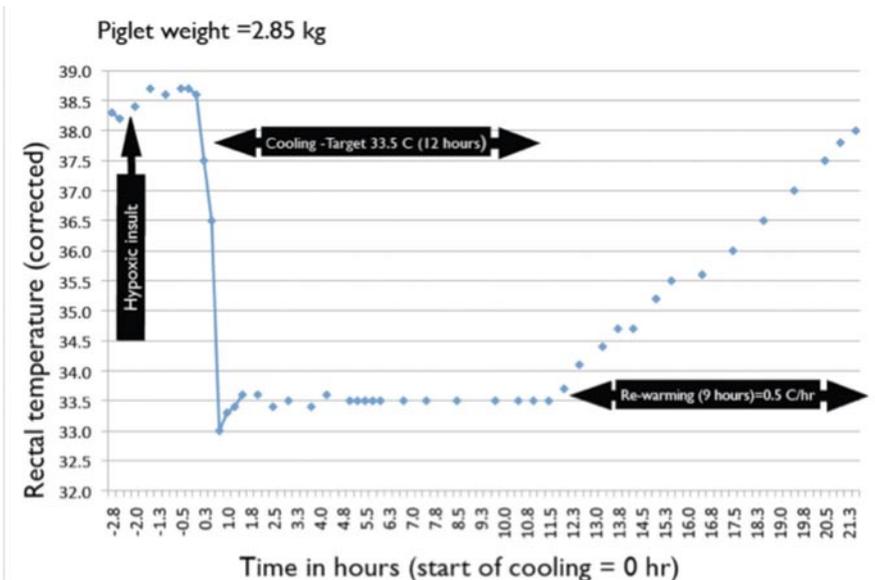
- 3 modes of operation for maximum flexibility in use
- Data storage for allows simple analysis of temperature profiles
- Large colour screen is easy to see across the room
- Benchtop mountable for space saving
- Small / Lightweight portable device
- Restarts from same settings in event of power failure
- Internal battery to save settings
- USB output
- Optional use of skin probes

### Modes of Operation

The Tecotherm Neo has 3 modes of operation:

- **Constant Mattress Temperature**  
No Servo Control, useful for research work and where control of the mattress needs to be stable, or where experienced staff are available to monitor the patient
- **Servo-Controlled Rectal Temperature**  
The Tecotherm Neo maintain the temperature that Clinician has set via the rectal temperature probe. Rate of change can also be set to allow even re-warming and cooling
- **Programmable Servo-Controlled Mode**  
As above but the Clinician can set the duration of cooling, the rate of re-warming as well as the target temperature, the Tecotherm Neo will complete the whole cycle without interruption

### Live Experimental Data – Servo Control Mode



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## SPECIFICATION

<b>Dimensions</b>	H 307mm, W 373mm, D 190mm
<b>Weight</b>	7.2kg (Note: weight when reservoir is full of Fluid)
<b>Electricity consumption</b>	1.5 A/ 230 VAC 3.1 A/ 110 VAC Max. 345 W
<b>Noise output</b>	54 – 54.5dB (Mean value 1m distance)
<b>Fluid capacity</b>	250ml (Inner Tank) 500ml (Fill Up Set)
<b>Fluid active ingredients</b>	Ethyl alcohol (Ethanol), Methyl Ethyl Ketone (MEK)
<b>Minimum fluid temperature</b>	12°C
<b>Maximum fluid temperature</b>	39°C
<b>Maximum Patient weight</b>	**kg
<b>Data storage capacity</b>	2GB 500,000 hours (all set and measured parameters)

## ORDERING INFORMATION:

<b>DESCRIPTION</b>	<b>PART NUMBER</b>
<b>Tecotherm Neo Starter Kit</b>	TC-NEO-SK
<b>Includes:</b>	Tecotherm Neo Mains Cable 2 Rectal Probes (Reusable) 2 Skin Probes (Reusable) 2m Mattress Connecting Hoses Fill-Up Set Inter Layer Foils (Case of 10) 2 Aqua Wrap Around Mattress complete with ties (Reusable)

## SPARES AND ACCESSORIES

<b>DESCRIPTION</b>	<b>PART NUMBER</b>
Aqua pad Mattress 30 x 45cm	TC-MATT(S)
Aqua pad Mattress 60 x 90cm	TC-MATT (L)
Aqua Wrap Around Mattress complete with ties	TC-MATT-NEO
Mattress Connecting Hoses 1m	TC-MCC-1M
Mattress Connecting Hoses 2m	TC-MCC-2M
5ltr Bottle of Coolant Fluid	TC-COOLFLD
Reusable Rectal Temperature	TC****
Reusable Skin Temperature	TC****
Felt Ties (Case of 50)	TC-NEOFS
Inter Layer Foils (Case of 10)	TC-FFL
Trolley for Tecotherm Neo	TC-TNCART

### \*References and further reading:

Azzopardi et al: Moderate Hypothermia to Treat Perinatal Asphyxial Encephalopathy. N Eng Jour Med 2009

Blackmon et al: Hypothermia: A Neuroprotective Therapy for Neonatal Hypoxic-Ischemic Encephalopathy. Pediatrics 2006

Shankaran et al: Whole Body Hypothermia for Neonates with hypoxicischemic encephalopathy. New Eng Jour Med 2005

Gluckman et al: Selective Head Cooling with Mild Systemic Hypothermia after neonatal encephalopathy: multi centre randomised trial. Lancet 2005



The details given in this leaflet are correct at time of going to press. The company reserves the right to improve the products shown.

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**NicheMedical**

Solutions in Respiratory Care & Diagnosis

Telephone 1300 136 855 Facsimile 1300 664 204

Email: [info@nichemedical.com.au](mailto:info@nichemedical.com.au)

[www.nichemedical.com.au](http://www.nichemedical.com.au)